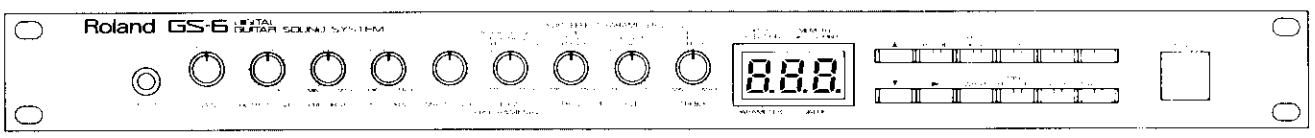
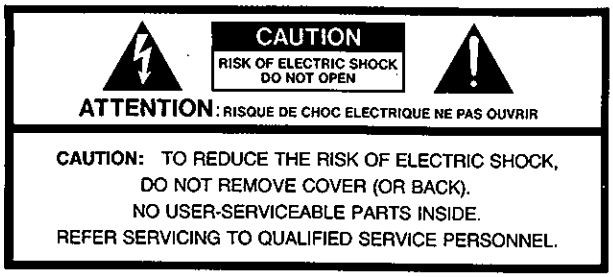
Roland

DIGITAL GUITAR SOUND SYSTEM

GS-6

Owner's Manual




CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
ATTENTION: RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

WARNING — When using electric products, basic precautions should always be followed, including the following:

1. Read all the instructions before using the product.
2. Do not use this product near water — for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. The product should avoid using in where it may be effected by dust.
8. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
9. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
10. Do not tread on the power-supply cord.
11. Do not pull the cord but hold the plug when unplugging.
12. When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
13. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
14. The product should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled into the product; or
    C. The product has been exposed to rain; or
    D. The product does not appear to operate normally or exhibits a marked change in performance; or
    E. The product has been dropped, or the enclosure damaged.
15. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

SAVE THESE INSTRUCTIONS

For the U.K.

WARNING: THIS APPARATUS MUST BE EARTHED

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.
GREEN-AND-YELLOW: EARTH, BLUE: NEUTRAL, BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

The product which is equipped with a THREE WIRE GROUNDING TYPE AC PLUG must be grounded.

Thank you for purchasing the Roland Digital Guitar Sound System GS-6.
The GS-6 is a fully digitally controlled preamplifier that features a great variety of funcitons and effects. To make the best use of the GS-6, read this owner's manual carefully.

FEATURES

- The GR-6 incorporates a 16 bit A/D/A converting system, and 28 bit internal arithmetic digital signal processor. Signals from the guitar are processed fully digitally, thus, there is no deterioration of sound quality.

- The GS-6's digital overdrive adopts the latest digital technology, giving a mild and warm, tube-like effect. The GS-6 contains eight different overdrive sounds, allowing you to create all sorts of guitar sounds from clean to wildly distorted sounds.

- The GS-6 also features digitally processed reverb, delay and chorus effects for guitar sounds. More than one of these three effects can be simulataneously used. The optimum setting are automatically obtained, so ideal guitar sounds can be created only using the GS-6.

- 64 different effect and preamplifier programs can be stored in memory, and any of them can be instantly called.

- The Hum Cancel and Noise Suppressor are provided for effective removal of the hum and noise induced by pickup from a guitar.

- MIDI sockets are provided for controlling the GS-6 from an external MIDI device.

- Both balance (XLR type) connectors and unbalance type output jacks are provided for more integrated connections, whether for recording live performance.

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IMPORTANT NOTES

In addition to the items listed under Safety Precautions, on page 2, we request that you please read and adhere to the folloing.

[Concerning the power supply]

- Whenever you make any conections with other devices, always turn off the power to all equipment first. This will help in preventing malfunction, and damage to speakers.
- Do not force the unit to share the same power outlet as one used for distortion producing devices (such as motors, variable lighting devices). Be sure to use a separate power outlet.

[Concerning placement]

- Should the unit be operated nearby television or radio receivers, TV pictures may show signs of interference; and static might be heard on radios. In such cases, move the unit out of proximity with such devices.

[Maintenance]

- For everyday cleaning, wipe the unit with a soft dry cloth, or one that is dampened slightly. To remove dirt that is more stubborn, wipe using a mild, neutral detergent. Afterwards, make sure to wipe thoroughly with a soft cloth.
- Never apply benzene, thinners, alcohol or any like agents, to avoid the risk of discloration and deformation.

[Other Precautions]

- Protect the unit from storong impact.
- A certain small amount of heta will be radiated from the unit, and thus should not be considered abnormal.
- Before using the unit in a foreign country, check first with your local Roland Service Station.

[Concerning memory backup]

- Within the unit is contained a battery which serves in maintaining the contents of memory while the main power is off. The normal life of this battery is 5 years or more, but it is strongly recommended that you change it every 5 years as a rule. When it is time to change the battery, contact a Roland Service Station.

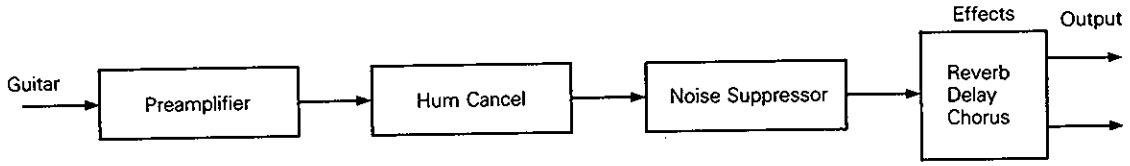
* The first time you need to change the battery could occur before 5 years have passed.

- Please be aware that the contents of memory may at times be lost; when sent for repairs or when by some chance a malfunction has occured. Important data should be written down on paper. During repairs, due care is taken to avoid the loss of data, however, in certain cases, such as when circuitry related to memory itself is out of order, we regret that it may be impossible to restore the data.

OUTLINE OF THE GS-6

[Structure of the GS-6]

The GS-6 consists of the:
Preamplifier section, that includes the overdrive and equalizer, Effect section, that includes the reverb, delay and chorus effects, Noise Suppressor section, that removes noise and Hum Cancel section, that removes hum.



64 different patch memories can be stored in the GS-6's memory.
A patch memory accomodates settings for the preamplifier; on/off status and settings for each effect; and the on/off status of the Noise Suppressor and Hum Cancel sections. Patch memories are organized into eight banks and eight numbers, as shown below.
During live performance, you can quickly access the desired sound simply by selecting the relevant patch memory.

No. \ Bank	1	2	3	4	5	6	7	8
1	11	12	13	14	15	16	17	18
2	21	22	23	24	25	26	27	28
3	31	32	33	34	35	36	37	38
4	41	42	43	44	45	46	47	48
5	51	52	53	54	55	56	57	58
6	61	62	63	64	65	66	67	68
7	71	72	73	74	75	76	77	78
8	81	82	83	84	85	86	87	88

Numbers in squares: Patch Memories

* The threshold level of the Noise Suppressor is automatically set to the same value for all the patch memories.
* The frequency of the Hum Cancel is automatically set to the same value for all the patch memories.

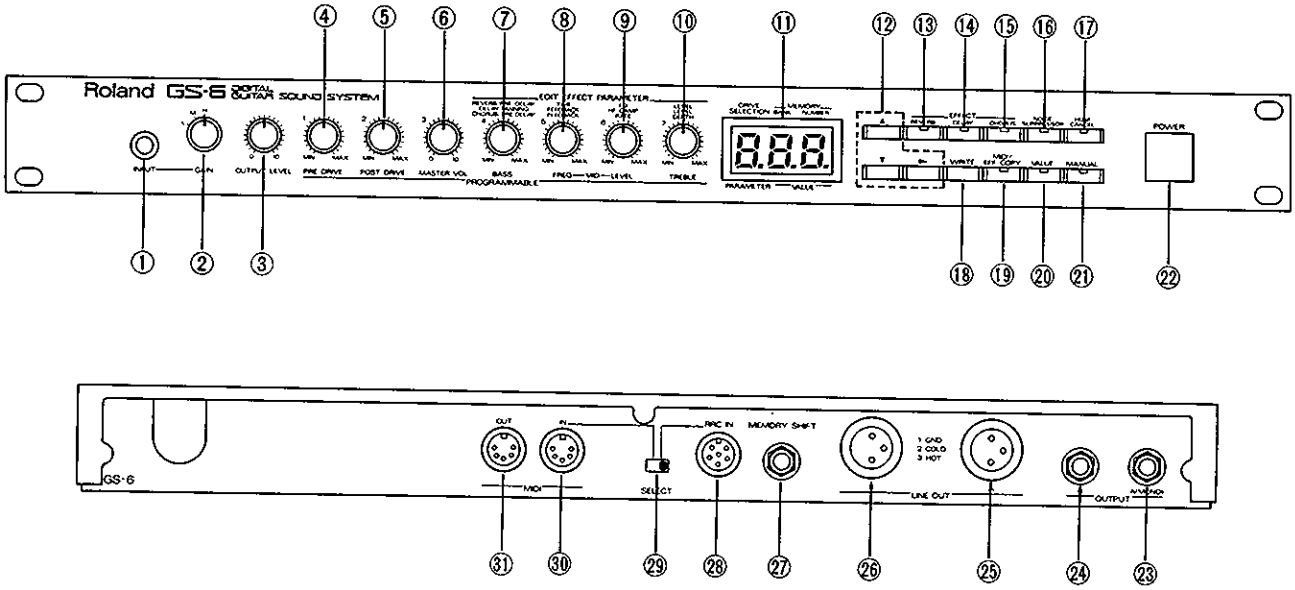
[Effect section]

- The Reverb effect creates reverberations. Reverberation is not the sound that reaches the listener's ears directly, but are reflections from walls or ceiling. For instance, when you play an instrument in a spacious hall, there are sounds remaining even after the instrument stops generating sounds. This is the reverb.

- Delay is sound slightly delayed from the primary sound. It gives an "echo" like effect. You can make sound fatter, depending on the way repetitions are produced.

- The Chorus effect creates rich and spacious sounds. Using the chorus, you can also create flanger or short-delay effects.

PANEL DESCRIPTION



① Input Jack
To this jack, connect a guitar.

② Gain Selector Switch
This adjusts the input sensitivity depending on the type of the guitar connected to the Input jack.

③ Output Level Knobs
This controls the output level from the Output jacks. (It does not affect the output level from the Line Out ‹XLR Connector›.)

④ – ⑩ Parameter Knobs
These knobs control the values of the corresponding parameters.

⑪ Display
This indicates the current bank/number during playing. During editing, it shows the value of the parameter currently being edited.

⑫ Function Button
This can be used for selecting or editing a parameter.

⑬ – ⑮ Effect Buttons (Reverb/Delay/Chorus)
These turn on/off each effect. When the effect is on, the indicator of the corrsponding button lights up. To edit the settings of an effect, hold the relevant button down for more than one second (the indicator blinks).

⑯ Noise Suppressor Button
This turns on or off the Noise Suppressor. When the Noise Suppressor is turned on, the indicator lights up. To edit the setting of the Noise Suppressor, hold the button down for more than one second (the indicator blinks).

⑰ Hum Cancel Button
This turns on or off the Hum Cancel. When the Hum Cancel is turned on, the indicator lights up. To edit the setting of the Hum Cancel, hold the button down for more than one second (the indicator blinks).

⑱ Write Button
To write programs you have made, hold this button down for more than one second.

⑲ MIDI/Effect Copy Button
Use this button to set MIDI parameters. (When the indicator is lit, the unit is in the MIDI parameter setting mode.) This button is used for copying an effect in the effect setting made.

⑳ Value Button
When this button is set to on, the indicator lights up and the value of each parameter can be monitored in the display.

㉑ Manual Button
When this button is set to on, the indicator lights up and the value of each parameter in the preamplifier section is determined by the position of the relevant Parameter Knobs.

㉒ Power Switch
This switches on or off the unit.

㉓, ㉔ Output Jacks
Use both A and B for stereo output, and use only A for monaural. (In monaural, A and B sounds are mixed and output from A.)

㉕, ㉖ Line Out Connectors
These are XLR (balance) type connectors. A and B are always stereo output, therefore monaural output cannot be obtained even by using only one of them.

㉗ Memory Shift Jack
Connect the pedal switch DP-2 to this jack. Numbers of Patch memories can be called in sequence by pressing the pedal.

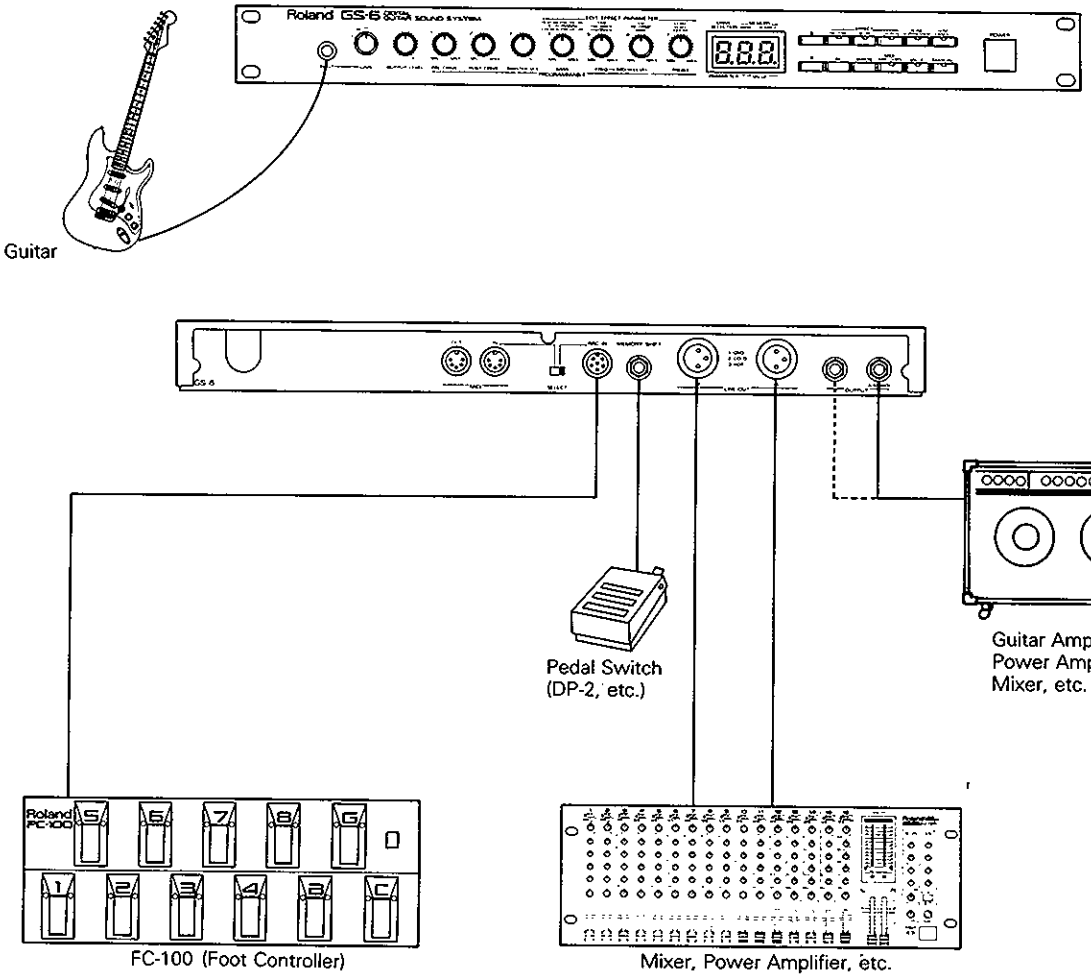
㉘ RRC IN Socket
Connect the optional foot controller FC-100 to this socket.

㉙ Select Switch
This switches the RRC IN and MIDI IN socket modes. To use the foot controller FC-100, set this switch to the RRC IN position, and to use a MIDI device, set it to the MIDI IN position. (Two sockets cannot be used at the same time.)

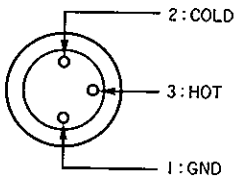
㉚, ㉛ MIDI Sockets (IN/OUT)
Connect an externla MIDI device through sockets. For details, read "USING MIDI DEVICES" on page 24.

[1] CONNECTIONS

Before making connections, switch all the units off and turn down the volume of the amplifier.



* The Output jacks and Line Out connectors can be used at the same time.
* The pinouts on the XLR connector are as shown below. Before conections, make sure all other connectors conform.



[2] PLAY

1. POWER-UP AND STAND-BY

Make sure all units are correctly connected. Then switch on the GS-6, then the amplifier.

Adjust the imput sensitivity depending on the type of guitar used.
Single coil pickup guitar ... H
Hum bucking pickup guitar ... M
Large output guitar ... L

* If the indicator of the [MANUAL] button is lit, press it to turn it off.
* The GS-6 requires a moment after being switched on before aperating, due to its circuit protection feature.

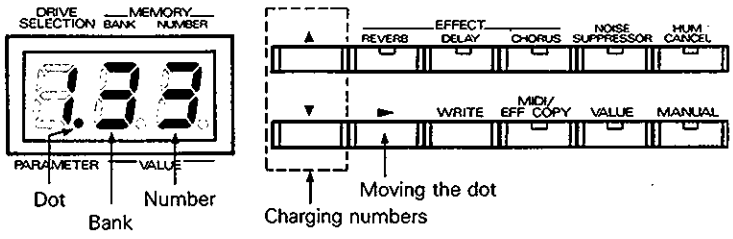
2. PATCH CHANGE

a. PATCH CHANGE USING THE PANEL SWITCHES

Various programs (Patch Memories) are preprogrammed from the manufacturer. Now, let's listen to these sounds using the panel switches.

* The contents of the preprogrammed patch memories are shown on the attached sheet.

‹Display Example›



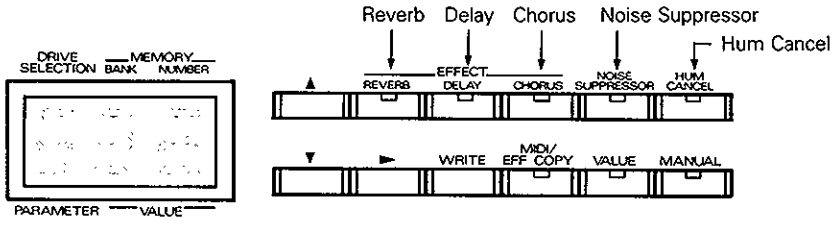
① Adjust the volume of sound using the GS-6's Output Level Knob, or the volume control on the amplifier or mixer connected to the GS-6.

* The volume of the sound fed through the Line Out connectors cannot be controlled with the Output Level Knob. Use the volume control on the amplifier or mixer.

② Press the ▶ button to move the dot to the bank or number position.
③ Press the ▲ ▼ buttons to change the number in the display.
When the dot is positioned at the bank, the bank numbers change in numerical order.
When the dot is positioned at the number, the numbers change in numerical order.
④ Play the guitar to listen to the sound.
⑤ Change to other banks/numbers, and to listen to them as well.

- **Effect On/Off**

On/off of each effect (reverb, delay or chorus) can be checked with the indicator of the corresponding Effect Button. When a patch memory is selected, the buttons of the turned-on effects are lit. On/off the Noise suppressor and Hum Cancel can be monitored simplarly.



Pressing each Effect Button turns on or off the corresponding effect. When you turn on an effect, the type (delay time when the delay is turned on) of the effect is displayed for a while.

* The effect on/off settingis erased by selecting a different bank/number. To retain it, take an appropriate writing procedure. (See page 23.)

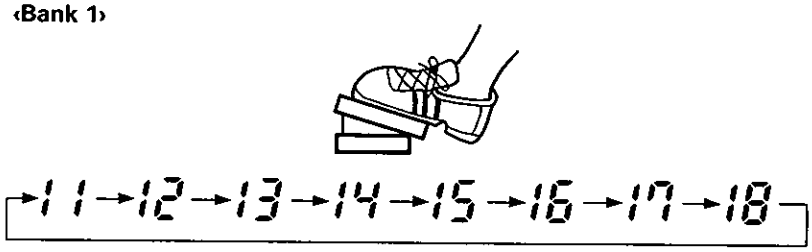
b. PATCH CHANGE USING THE PEDAL SWITCH

Using the optional pedal switch DP-2 or FS-5U or the foot controller FC-100, patch memories (bank/number) can be changed by pressing the pedal.

[Using the Pedal Switch]

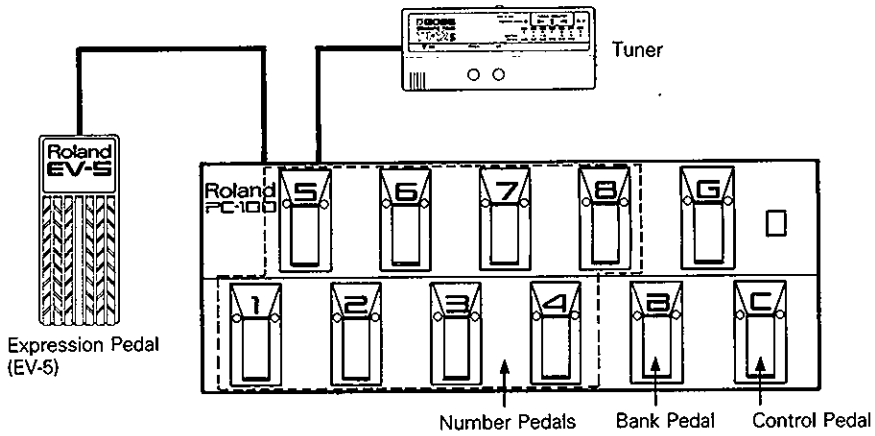
By connecting the pedal switch DP-2 or FS-5U to the Memory Shift jack, the numbers of Patch Memories can be changed with the pedal. (The bank numbers cannot be changed.)

‹Bank 1›



[Using the Foot Controller FC-100]

By connecting the Foot Controller FC-100 to the RRC IN Socket on rear of the unit, you can control the numbers/banks selection and volume with the pedal.



* When using the FC-100, set the Select Switch on the rear of the GS-6 to the RRC IN position, then insert the foot controller securely to the RRC IN socket.
* The RRC IN socket on the GS-6 is specific for the Roland Foot Controller.

• Changing Patch Memories

Banks and numbers can be changed with the bank pedal and eight number pedals.

• Using the Control Pedal

To mute sound, press the control pedal (the Control Indicator lights up).
When the Mode Selector Switch on the FC-100 is set to the Mode I, the muting funciton is turned on or off by pressing the control pedal. When it is set to the Mode II, the muting function is on only while the control pedal is pressed down.

* The muting on state is automatically canceled when the bank/number is changed with the FC-100.

• Using the Expression Pedal

By connecting the Expression Pedal EV-5 (optional) to the FC-100, the volume of the GS-6 can be controlled with the pedal.
When the EV-5 is fully pressed, the volume is equal to the setting of the GS-6's Master Volume.
When the pedal is returned to the original position (lifted), the volume is equal to the EV-5's Minimum Volume.

• Tuning

Guitar signals for tuning are constantly output from the Signal Out jack of the FC-100, allowing you to tune any time you like.

[3] CREATING ORIGINAL SOUNDS

1. OVERVIEW

To create your own sounds on the GS-6, proceed as follows.

- **Creating an original program**

If you wish to edit an existing Sound, call the Patch Memory to be used. To make a program from scratch, select the location where you wish to write the program; one you don't mind losing. Then select the function to be edited. Each function takes on several parameters. As you play the guitar, change the values of the parameters to your taste.

* Effect settings for any other bank/number can be copied to the bank/number currently selected. (See page 20 "Copying Effects"). Using this function, any existing effect settings can be easily used, adding to convenience.

- **Writing the program you have made**

The program you have made will be erased by selecting a different bank/number. To retain it, you must take the appropriate writing procedure.
You do not need to individually write each function you set, because data is not erased untill a different bank/number is selected.

* The settings of the Noise Suppressor and Hum Cancel functions are automatically written, without performing a write.

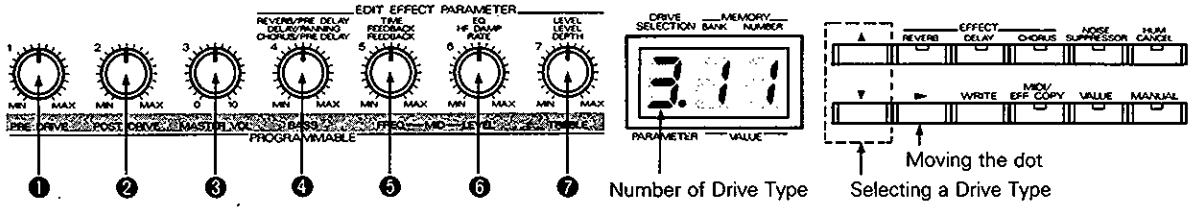
- **Notes on editing**

The values of parameters are edited using buttons and knobs. Before you start editing, the positions of knobs do not necessarily match the existing values.
Therefore, values may not change by moving the corresponding knobs when you initiate. To resolve this, rotate the knob to the MIN (0) position once, or move the knob to the position of the current value.

* For those who prefer the feel of conventional guitar amplifiers, the pre-amplifier section can also accept settings based on the current physical position of the knob. (See page 14 "Manual Mode".)

2. SETTING THE PREAMPLIFIER SECTION

In the preamplifier section, you may control the fundamental elements such as distortion, sound alteration caused by picking, sustainment of sound, etc. Set each parameter with the relevant Parameter Knob in the normal playing condition (bank/number display).



• Drive Types Value : 1 – 8

Select one of the eight basic sound distortions. 1 to 6 are all different sounds, with deeper distortion at higher numbers. 7 and 8 have unusual characteristics.

Press the ▶ button to move the dot to the drive selection position, then press ▲ ▼ button to select a drive type.

Value	Type
1	Dry
2	Solid
3	Warm
4	Hard
5	Metal
6	Heavy
7	Special I
8	Special II

❶ Pre-drive Value : 0 – 99

This simulates the volume of the pre-stage amplifier. The distortion can be controlled without altering the volume that much.

❷ Post-drive Value : 0 – 99

This simulates the volume of the post-stage amplifier. The distortion can be controlled without altering the volume that much.

❸ Master Volume Value : 0 – 99

This is for adjusting the volume balance with respect to other Patch Memories.

❹ Bass Value : 0 – 99

This controls the volume of bass sounds.

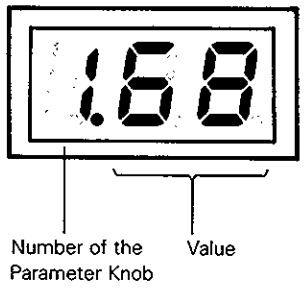
❺ Middle Frequency Value : 0 – 99
This sets the frequency of the middle sound to be controlled.

* When the Middle Level is set to 50, the sound is not affected by changing the middle frequency.

❻ Middle Level Value : 0 – 99
This sets the volume of the frequency set with the Middle Frequency. 50 is the standard value; lower values cut the volume, while higher values boost them.

❼ Treble Value : 0 – 99
This sets the volume of treble sound.

* To write the edited data, see page 23 "Writing the program".
* When a Paramter Knob is being rotated, the indicator of the **VALUE** button is lit, showing the number and value of the corresponding knob. (Similar display is shown when an effect is being set.)



[Manual Mode]
The preamplifier section features the Manual mode, which allows settings to be made starting from the current Parameter Knob settings, just like a conventional guitar amplifier.

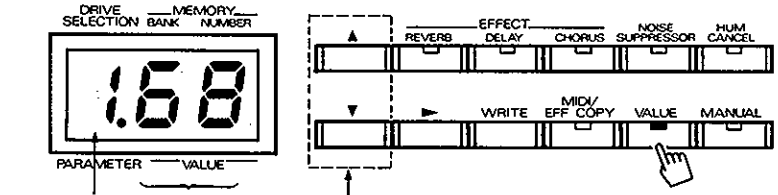
Press the **MANUAL** button to turn to the Manual mode (the indicator lights up). Now, the positions of the Parameter Knobs determine the values of the parameters.
Press the **MANUAL** button once again to cancel the Manual mode (the indicator goes out). The values are returned to the previous settings, those when the bank/number was selected.

* In the Manual mode, the display does not indicate any value changes.
* Even when setting parameters other than those of the preamplifier section, pressing the **MANUAL** button will return the unit to the normal playing condition, erasing the edited data.

[Monitoring the values]

If you wish to see the current value you have set with each Parameter Knob, do as follows. You can also use the same procedure while setting effects.

Press the [VALUE] button, and the indicator of the button lights up showing the number and value of the parameter knob currently in use. Using the [▲] [▼] buttons, select the number of the parameter you wish to monitor.



Number of the Parameter Knob

Value

Selecting the number of a Parameter Knob

* If the number of the Parameter Knob is blinking, the value of the corresponding parameter is not yet changed. (This does not apply to the Manual mode.)

Press the [VALUE] button, and the indicator of the button goes out and the display returns to the previous indication.

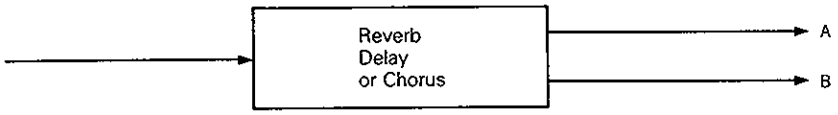
3. SETTING THE EFFECT SECTION

Set the reverb, delay and chorus effects individually.

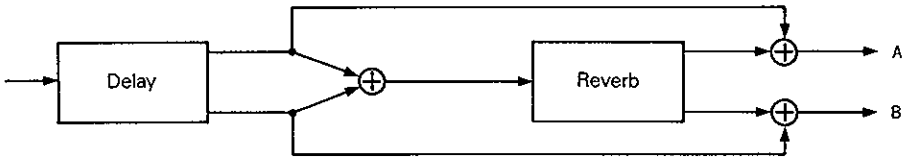
[Structure of the Effect Section]

The connections of the effects automatically change depending on the combination of effects or a delay's panning as shown below. In other words, the GS-6 releases you from the complicated task of changing connections that you would need when using individual effect units.

When any of the effects is on:

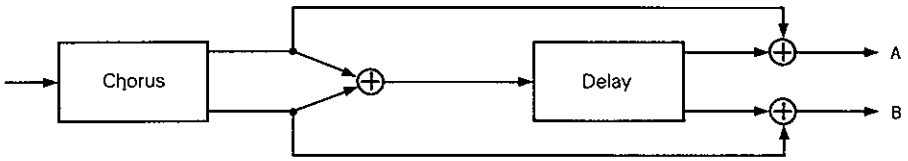


When the delay and reverb are on:

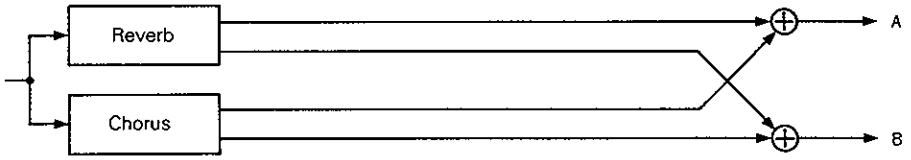


When the delay (panning: 99) and chorus are on:

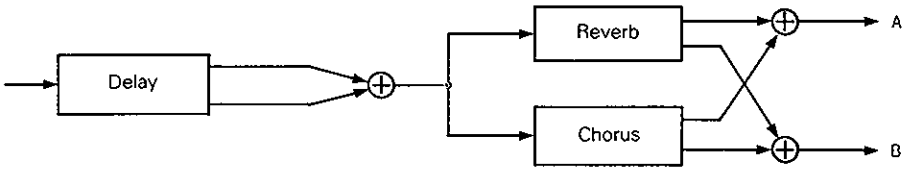
When the delay (panning: 0-98) and chorus are on:



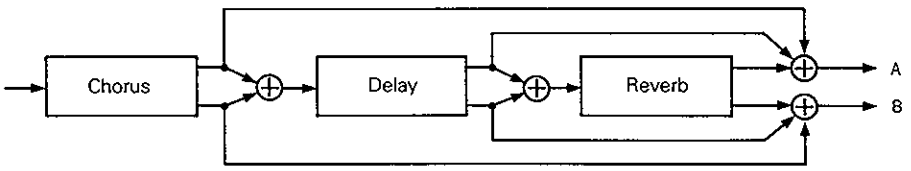
When the reverb and chorus are on:



When the reverb, delay (panning: 99) and chorus are on:

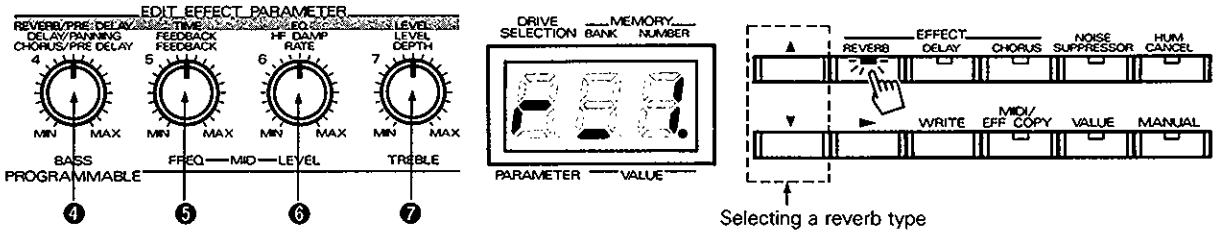


When the reverb, delay (panning: 0-98) and Chorus are on:



a. REVERB

Press the **REVERB** button for more than a second. The indicator of the REVERB button blinks, showing that it is in the reverb setting mode. The display shows the reverb type currently in use. Each parameter can be edited with the corresponding Parameter Knob and button as shown below.



* In the Manual mode, effects cannot be edited. To edit effects, press the **MANUAL** button to turn off the indicator of the **MANUAL** button.

• Reverb Types Value : r-1 to r-8

Select one of the eight basic reverb types.

Value	Type	Description
r-1	Small Room	Sharp and spacious reverb effect. Dense and rich reverb sound.
r-2	Medium Room	
r-3	Medium Hall	Deeper than the room type reverbs. The density of the reverb sound is low and beautiful resonances are obtained.
r-4	Large Hall	
r-5	Medium Plate	Simulation of the plate reverb often used for studio recording. Less decay in higher frequencies, and the sound is bright.
r-6	Large Plate	
r-7	Two Springs	Simulation of spring reverb built in a guitar amplifier. Transparent and moist sound is obtained.
r-8	Three springs	

❹ Pre-delay Value : 0 – 99

This sets the depth of the room. Higher values make a deeper room.

❺ Time Value : 0 – 99

This sets the reverberation time. Higher value make a longer reverb time.

❻ Equalizer Value : 0 – 99

This sets the volume of higher frequency sound. Higher values boost high frequency sound more intensively, making a brighter reverb sound.

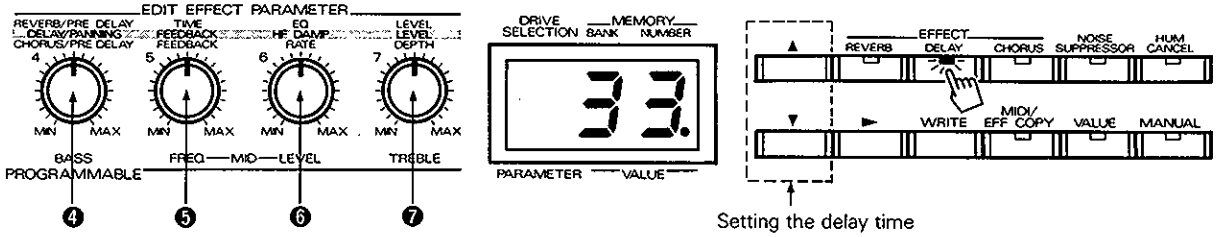
❼ Level Value : 0 – 99

This sets the volume of reverb sound. Higher values increase the volume of the reverb sound.

* To monitor the value of each parameter, press the **VALUE** botton. (See page 15.)
* To write the edited data, see page 23 "Writing the program".
* To return to the normal playing mode, press the **REVERB** button. (The indicator lights up.)
* You may hear a click noise when changing the values of a parameter, but there is nothing to worry about.

b. DELAY

Press the **DELAY** button for more than a second. The indicator of the **DELAY** button blinks, showing that it is in the delay setting mode. The display shows the current delay time. Each parameter can be edited with the corresponding Parameter Knob and button as shown below.



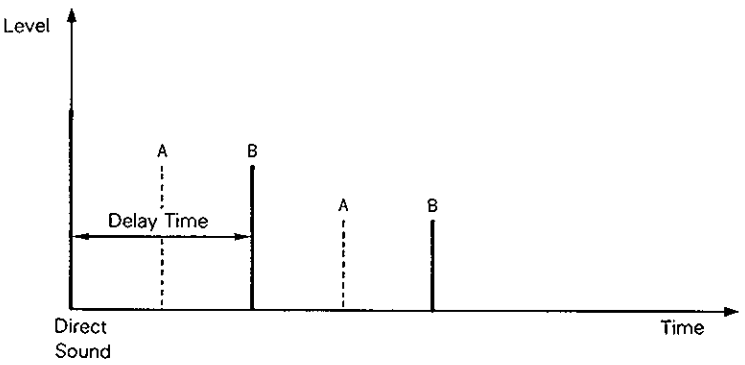
Setting the delay time
(Pressing a button while holding the other one down will quicken the change of the value.)

* In the Manual mode, effects cannot be edited. To edit effects, press the **MANUAL** button to turn off the indicator of the **MANUAL** button.

• Delay Time Value : 1 – 999ms
Set the delay time from 1 to 999ms.

* As you set the panning to lower values, the delay sound comes earlier than the actual time set with the delay time.

❹ Panning Value : 0 – 99
This sets the time lag between the two delay sounds delivered to the two outputs A and B. Lower values make the delay sound of output A quicker. At 99, there is no time difference between A and B.



❺ Feedback Value : 0 – 99
This sets the feedback amount of delay sound. Higher values increase the amount of the feedback.

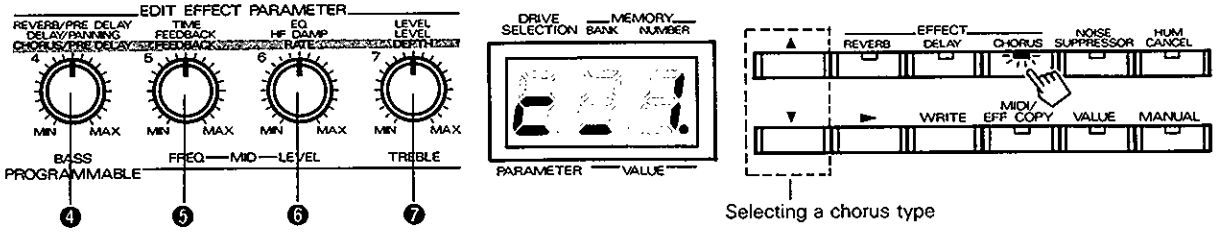
❻ HF Damp Value : 0 – 99
This sets the decay ratio for higher frequencies of repeats. Higher values make the delay sound milder.

❼ Level Value : 0 – 99
This sets the volume of delay sound. Higher values increase the volume of the delay sound.

* To monitor the value of each parameter, press the **VALUE** button. (See page 15.)
* To write the edited data, see page 23 "Writing the program".
* To return to the normal playing mode, press the **DELAY** button. (The indicator lights up.)
* You may hear a click noise when changing the values of a parameter, but there is nothing to worry about.

c. CHORUS

Press the **CHORUS** button for more than a second. The indicator of the CHORUS button blinks, showing that it is in the chorus setting mode. The display shows the chorus type currently in use. Each parameter can be edited with the coresponding Parameter Knob and button as shown below.



Selecting a chorus type

* In the Manual mode, effects cannot be edited. To edite effects, press the **MANUAL** button to turn off the indicator of the **MANUAL** button.

• Chrous Types Value : c-1 to c-4
Select one of the four chorus types. The chorus type determines how the normal and chorus sounds are output from output A and B.

Value	Output A	Output B
c-1	Normal + Chorus A	Normal + Chorus A
c-2	Normal + Chorus A	Normal – Chorus A
c-3	Normal + Chorus A	Normal + Chorus B
c-4	Normal	Chorus A

* In monaural output, A and B signals are mixed and output, so the chorus effect cannot be obtained with Chorus Type 2.

❹ Pre-delay Value : 0 – 99
This sets the delay time for the chorus effect. Lower values create a flanger effect.

❺ Feedback Value : 0 – 99
This sets the amount of feedback. Higher values increase the amount of the feedback.

❻ Rate Value : 0 – 99
This sets the rate of chorus effect. Higher values quicken the rate of the effect.

❼ Depth Value : 0 – 99
This sets the depth of chorus effect. Higher values deepen the effect.

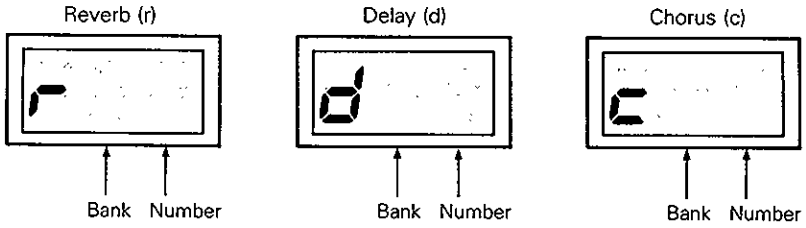
* To monitor the value of each parameter, press the [VALUE] button. (See page 15.)
* To write the edited data, see page 23 "Writing the program".
* To return to the normal playing mode, press the [CHORUS] button. (The indicator lights up.)
* You may hear a click noise when changing the values of a parameter, but there is nothing to worry about.
* The Chorus effect may not work properly for a few seconds after the parameter's value has been changed. This is quite normal under some Chorus settings.

d. COPYING EFFECTS

Effect settings (reverb, delay and chorus) of a bank/number can be copied to the bank/number currently selected.

Using this function, any existing effect settings can be copied.
To copy effect settings, do as follows.

① Select the destination bank/number.
② Press the Effect Button which correspond to the effect to be copied for more than a second. (The indicator of the button blinks.)
③ Press [MIDI/EFF COPY] button.
The display shows the bank/number currently selected and the name of the effect to be copied.



④ Using the [▲][▼][▶] buttons, select the source bank/number of the effect to be copied.

* To leave this mode, press the blinking Effect Button.

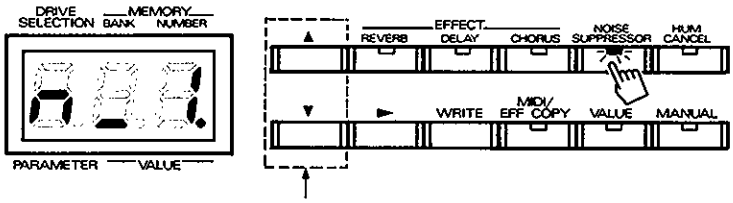
⑤ Press the **MIDI/EFF COPY** button to copy the effect.

* To write the copied data, see page 23 "Writing the program".
* During the copy procedure, pressing the **MIDI/EFF COPY** button does not light up the corresponding indicator.

4. NOISE SUPPRESSOR

The Noise Suppressor reduces signals of lower level sounds, and therefore effectively removes noise which otherwise would be heard while no sound is being generated.
The Noise Suppressor functions commonly for all the Patch Memories, therefore you do not need to write it into memory. The on/off status of the Noise Suppressor can be written for each bank/number.

Press the **NOISE SUPPRESSOR** button for more than a second. The indicator of the button blinks showing that the unit is now in the Noise suppressor setting mode. The display shows the current threshold level.



Setting the threshold level

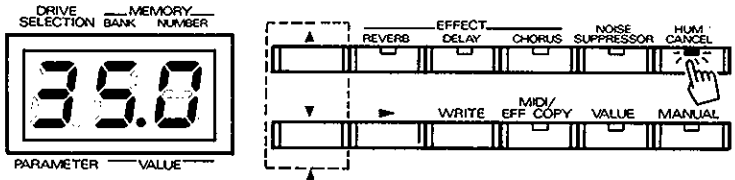
• Threshold Level Value : n-1 to n-5
Set the level where signals start to be reduced depending on the volume of noise. Set it to higher values if the noise is higher.

* If you set the guitar's volume too low while the threshold level is set high, there may be no sound produced because of the Noise Suppressor.
* To return to the normal playing condition, press the **NOISE SUPPRESSOR** button. (The indicator lights up.)

5. HUM CANCEL

The Hum Cancel function removes only the hum noise using a harmonic removing filter. Hum and noise from the power line, variable lighting system or display can be effectively removed.
The Hum Cancel functions commonly for all the Patch Memories, therefore, you do not need to write it into memory. The on/off status of the Hum Cancel can be written for each bank/number.

Press the **HUM CANCEL** button for more than a second. The indicator of the button blinks, showing that the unit is now in the Hum Cancel setting mode. The display shows the current frequency.



Setting the frequency
(Pressing one button while holding the other one down will quicken the change of value.)

- **Frequency Value : 35.0Hz – 80.0Hz (0.1Hz steps)**

Set the base frequency for removal of hum contents. You should set it to the same frequency as the power source for the most effective hum canceling.

* To return to the normal playing condition, press the **HUM CANCEL** button. (The indicator lights up.)

«To turn off the Noise Suppressor of Hum Cancel for all Patch Memories»
The Noise Suppressor and Hum Cancel can be turned on or off for each bank/number. However, it is also possible to turn them off for all Patch Memories (All Off).
To set the Noise Suppressor to All Off, select the Noise Suppressor setting mode, and to set the Hum Cancel to All Off, select the Hum Cancel setting mode, then press the ▶ button.
To cancel the All Off state, press the ▶ button again.

Noise Suppressor's All Off

Hum cancel's All Off

* An All Off setting is effective until the unit is switched off, at which point it reverts to the former settings.

6. WRITING THE PROGRAM

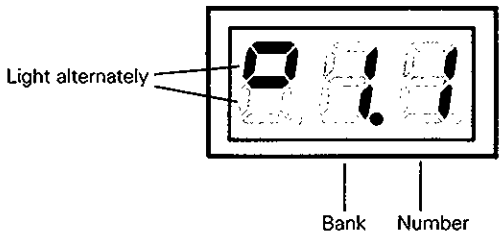
The edited Patch Memory will be erased when a different bank/number is selected or the [MANUAL] button is pressed. To retain the edited data, take the following writing procedure.
Each Patch Memory can store settings for the preamplifier section, the settings and on/off status of each effect, and the on/off status of the Noise Suppressor and Hum Cancel.

* When te indicator of the [MIDI/EFF COPY] button is lit, a write cannot be performed. Press the [MIDI/EFF COPY] button (the indicator goes out.)

- To write the edited data into the same Patch Memory, check that the settings for the sound are correct, then press the [WRITE] button for more than a second.
  The display changes, then the unit is returned to the playing mode when the data is correctly written.

- To write the edited data into a different Patch Memory, check sound of the edited data, then do as follows:

① Press the [WRITE] button.
The display blinks.



② Using the [▲] [▼] [▶] buttons, specify the destination bank/number.

* To cancel this mode, press the [WRITE] button.

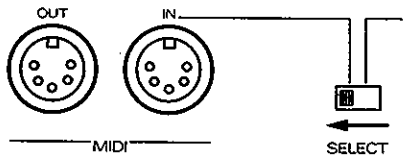
③ Press the [WRITE] button for more than a second.
The display changes, then the unit is returned to the normal playing mode after the data is successfully written.

[4] USING MIDI DEVICES

Before using MIDI for the first time, please read the separate booklet "Guidebook for MIDI".

1. MIDI SOCKETS

The GS-6 is provided with MIDI IN and MIDI OUT sockets.



- **MIDI IN Socket**

This is for receiving MIDI messages from an external MIDI device.

- **MIDI OUT Socket**

This is for sending MIDI messages from the GS-6 to an external MIDI device. The MIDI messages received through the MIDI IN socket are not transmitted from the MIDI OUT socket.

* To use the MIDI IN socket, set the Select Switch on the rear of the GS-6 to the MIDI IN position. The MIDI OUT sockets can be used regardless of the position of the Select Switch.

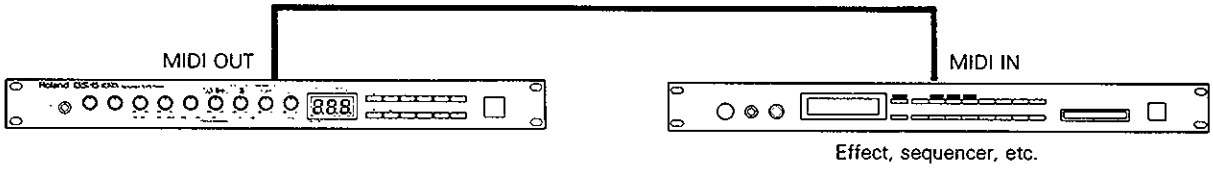
2. WHAT CAN MIDI DO ?

The GS-6's MIDI can be employed with other MIDI devices as follows.

[Changing Patch Memories form the external MIDI device]

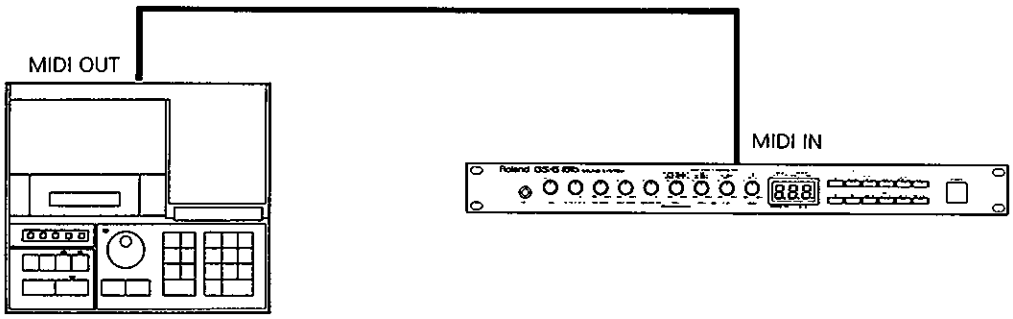
Using MIDI Program Change (Sound Selection) messages, banks/numbers of the GS-6 can be changed from the external MIDI device, or patches on the external MIDI device can be changed by changing the banks/numbers on the GS-6.

- **To change patches on the external device from the GS-6**



* Changing banks/numbers on the GS-6 will transmit the corresponding Program Change numbers to the external MIDI device.

• Changing Patch Memories from the external MIDI device



* The GS-6 is set to OMNI ON by the manufacturer, and thus can be controlled by an external MIDI device no matter which MIDI channel is selected on the external device. To control the GS-6 using specific MIDI messages, set the GS-6 to OMNI OFF, then set an appropriate MIDI channel.
* Using the Control Change message, the volume or muting state can be controlled.

Banks/numbers of the GS-6 can be automatically changed in accord with a programed sequencer performance, if necessary Program Change messages have been included in the sequencer data.

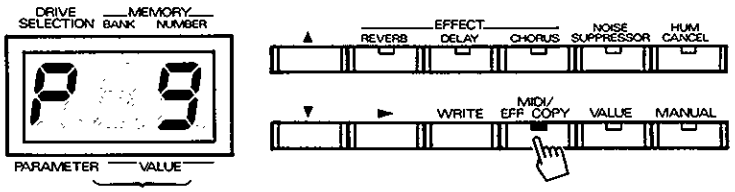
Program Change numbers and Banks/Numbers

Banks/numbers of the GS-6 correspond to the Program Change numbers as shown below. (Program Change numbers higher than 65 will be substituted with 1 to 64.)

Bank \ No.	1	2	3	4	5	6	7	8
1	1	2	3	4	5	6	7	8
2	9	10	11	12	13	14	15	16
3	17	18	19	20	21	22	23	24
4	25	26	27	28	29	30	31	32
5	33	34	35	36	37	38	39	40
6	41	42	43	44	45	46	47	48
7	49	50	51	52	53	54	55	56
8	57	58	59	60	61	62	63	64

Numbers in squares: Program Change Numbers

You can check the Program Change number that corresponds to the current bank/number in the display. Simply press the **MIDI/EFF COPY** button (the indicator lights up).



Program Change Number

To return to the bank/number display, press the **MIDI/EFF COPY** button again (the indicator goes out).

[Data Transfer]
Using MIDI exclusive messages, data can be transferred from the GS-6 to another GS-6 or to a MIDI sequencer (one capable of recording exclusive messages).
In other words, you can copy data on one GS-6 to another, or save large amounts of sound data for the GS-6 in a sequencer.

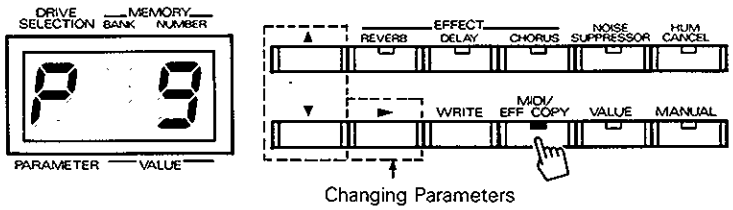
* For details, read page 28 "Data Transfer via MIDI".

3. SETTING MIDI PARAMETERS

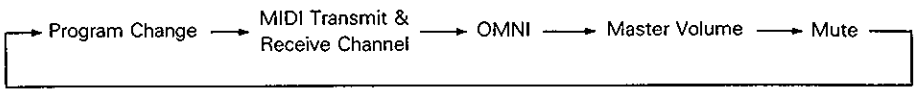
You may need to change MIDI settings depending on a particular setup.

Press the **MIDI/EFF COPY** button. The indicator of the button lights up showing that the unit is now in the MIDI setting mode.
The display shows the current Program Change number.
Using the ▶ button, specify the MIDI parameter to be edited, then change the settings with the ▲ ▼ buttons.

* For details of Program Change numbers, see page 25 "Program Change numbers and Banks/Numbers".
* The MIDI configuration you have set is retained even after the unit is switched off.



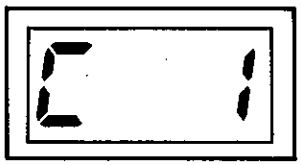
Changing Parameters



• **MIDI Transmit & Receive Channels (1 – 16)**

You must set the receive channel on the reciever unit and the transmit channel on the transmitter unit to the same channel.

Set the MIDI channel of the GS-6 to the same number as the connected device. (It is set to 1 by the manufacturer.)



MIDI Channel Number

• **OMNI ON/OFF**

To receive MIDI messages on all channels without discrimination, set to OMNI ON. When the GS-6 is set to OMNI ON, the external device can control the GS-6 no matter what MIDI channel is selected on the external device. (The GS-6 is set to OMNI ON from the manufacturer.)

OMNI OFF Display

OMNI ON Display

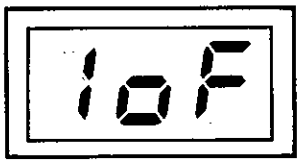
* Even when the GS-6 is set to OMNI ON, the MIDI messages from the GS-6 are transmitted on the set MIDI channel.

• **Control Changes (Master Volume: ON/OFF, Mute : ON/OFF)**

You can select whether or not to control the Master Volume or Mute with the Control Change message. (Both are set to OFF by the manufacturer.)

Master Volume (General purpose controller-1)

OFF Display



ON Display

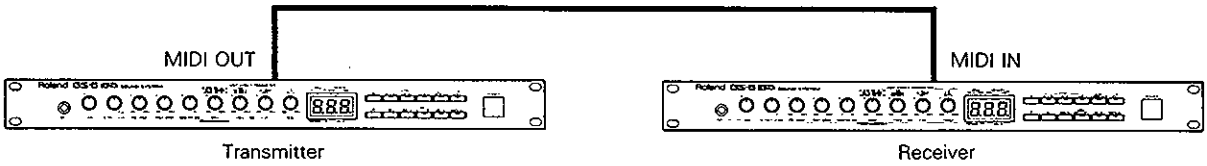
Mute (General purpose controller-5)

OFF Display

ON Display

4. DATA TRANSFER VIA MIDI

Using MIDI exclusive messages, it is possible to transfer the 64 Patch Memories stored in the internal memory of the GS-6 to another GS-6 or to a sequencer (one capable of recording exclusive messages). Such transmission is called bulk dump, whereas reception is called bulk load. The following explains how to transfer data from one GS-6 to another. To transfer data from the GS-6 to another MIDI device, read the relevant owner's manual.



① Set the MIDI channels of the transmiter and receiver to the same number.

② Set both the transmitter and receiver to the MIDI setting mode (the indicator of the **MIDI/EFF COPY** button is lit).

* Now, the receiver can receive data from the transmitter at any time.

③ Press the **WRITE** button on the transmitter for more than a second. The display responds as shown below, and the data is transmitted from the transmitter to the receiver.

Transmitter

Receiver

* If data is not correctly received, the display on the receiver will respond as shown below. If this happens, press the **MIDI/EFF COPY** button, then repeat the procedure.

To restore the factory presets

① Switch on the GS-6 while holding the ▼ and ▶ buttons down at the same time.
For about 2 seconds, the display shows "FP".

② Press the WRITE button while the display is still showing "FP".
"Ld" is shown in the display and the factory presets (11 to 48) are restored.

* If you do not press the WRITE button while the "FP" message is still displayed, the unit is returned to the normal playing condition without restoring the factory presets.

BLANK CHART

PATCH NO.	NAME	PRE AMP.								REVERB						DELAY						CHORUS						NS	HUM
		D.TYP	1 PRE	2 POST	3 M.VOL	4 BASS	5 FREQ.	6 LEVEL	7 TREBE	ON/ OFF	R.TYP	4 P.DEL	5 TIME	6 EQ	7 LEVEL	ON/ OFF	TIME	4 PAN	5 FBACK	6 HF D	7 LEVEL	ON/ OFF	TYPE	4 P.DEL	5 FBACK	6 RATE	7 DEPTH	ON/ OFF	ON/ OFF
—																												

PATCH NO.	NAME	PRE AMP.								REVERB						DELAY						CHORUS						NS	HUM
		D.TYP	1 PRE	2 POST	3 M.VOL	4 BASS	5 FREQ.	6 LEVEL	7 TREBE	ON/ OFF	R.TYP	4 P.DEL	5 TIME	6 EQ	7 LEVEL	ON/ OFF	TIME	4 PAN	5 FBACK	6 HF D	7 LEVEL	ON/ OFF	TYPE	4 P.DEL	5 FBACK	6 RATE	7 DEPTH	ON/ OFF	ON/ OFF
—																												

PATCH NO.	NAME	PRE AMP.								REVERB						DELAY						CHORUS						NS	HUM
		D.TYP	1 PRE	2 POST	3 M.VOL	4 BASS	5 FREQ.	6 LEVEL	7 TREBE	ON/ OFF	R.TYP	4 P.DEL	5 TIME	6 EQ	7 LEVEL	ON/ OFF	TIME	4 PAN	5 FBACK	6 HF D	7 LEVEL	ON/ OFF	TYPE	4 P.DEL	5 FBACK	6 RATE	7 DEPTH	ON/ OFF	ON/ OFF
—																												

Roland Exclusive Messages

1. Data Format for Exclusive Messages

Roland's MIDI implementation uses the following data format for all exclusive messages (type IV) :

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

≠ MIDI status : F0H, F7H

An exclusive message must be flanked by a pair of status codes, starting with a Manufacturer – ID immediately after F0H (MIDI version1.0).

≠ Manufacturer – ID : 41H

The Manufacturer – ID identifies the manufacturer of a MIDI instrument that triggers an exclusive message. Value 41H represents Roland's Manufacturer – ID.

≠ Device – ID : DEV

The Device – ID contains a unique value that identifies the individual device in the multiple implementation of MIDI instruments. It is usually set to 00H – 0FH, a value smaller by one than that of a basic channel, but value 00H – 1FH may be used for a device with multiple basic channels.

≠ Model – ID : MDL

The Model – ID contains a value that uniquely identifies one model from another. Different models, however, may share an identical Model – ID if they handle similar data.

The Model – ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model – IDs, each representing a unique model :

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

≠ Command – ID : CMD

The Command – ID indicates the function of an exclusive message. The Command – ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command – IDs, each representing a unique function :

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

≠ Main data : BODY

This field contains a message to be exchanged across an interface. The exact data size and contents will vary with the Model – ID and Command – ID.

2. Address – mapped Data Transfer

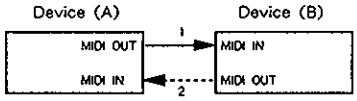
Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory – resident records – – waveform and tone data, switch status, and parameters, for example – – to specific locations in a machine – dependent address space, thereby allowing access to data residing at the address a message specifies.

Address – mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures : one – way transfer and handshake transfer.

≠ One – way transfer procedure (See Section 3 for details.)

This procedure is suited for the transfer of a small amount of data. It sends out an exclusive message completely independent of a receiving device status.

Connection Diagram

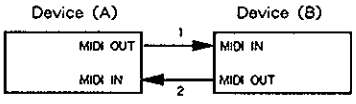


Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

≠ Handshake – transfer procedure (See Section 4 for details.)

This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that reliability and transfer speed are high enough to handle a large amount of data.

Connection Diagram



Connection at points 1 and 2 is essential.

Notes on the above two procedures

*There are separate Command – IDs for different transfer procedures.
*Devices A and B cannot exchange data unless they use the same transfer procedure, share identical Device – ID and Model ID, and are ready for communication.

3. One – way Transfer Procedure

This procedure sends out data all the way until it stops and is used when the messages are so short that answerbacks need not be checked.
For long messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts intervals of at least 20 milliseconds in between.

Types of Messages

Message	Command ID
Request data 1	RQ1 (11H)
Data set 1	DT1 (12H)

≠ Request data ≠ 1 : RQ1 (11H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.
On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request.

If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device will send out nothing.

8yte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model – ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

#Data set 1 : DT1 (12H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more data as well as a series of data formatted in an address – dependent order.

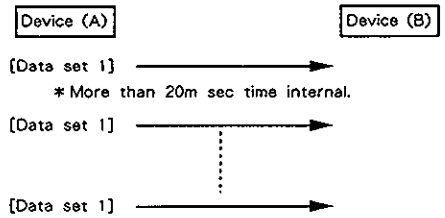
The MIDI standards inhibit non – real time messages from interrupting an exclusive one. This fact is inconvenient for the devices that support a "soft – through" mechanism. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

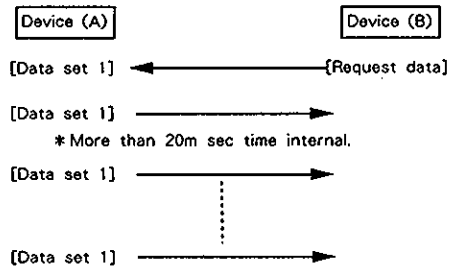
*A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The number of bytes comprising address data varies from one Model – ID to another.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

#Example of Message Transactions

●Device A sending data to Device B
Transfer of a DT1 message is all that takes place.



●Device B requesting data from Device A
Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.



4. Handshake – Transfer Procedure

Handshaking is an interactive process where two devices exchange error checking signals before a message transaction takes place, thereby increasing data reliability. Unlike one – way transfer that inserts a pause between message transactions, handshake transfer allows much speedier transactions because data transfer starts once the receiving device returns a ready signal.

When it comes to handling large amounts of data – – sampler waveforms and synthesizer tones over the entire range, for example – – across a MIDI interface, handshaking transfer is more efficient than one – way transfer.

Types of Messages

Message	Command ID
Want to send data	WSD (40H)
Request data	RQD (41H)
Data set	DAT (42H)
Acknowledge	ACK (43H)
End of data	EOD (45H)
Communication error	ERR (4EH)
Rejection	RJC (4FH)

#Want to send data : WSD (40H)

This message is sent out when data must be sent to a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of the data to be sent.

On receiving a WSD message, the remote device checks its memory for the specified data address and size which will satisfy the request. If it finds them and is ready for communication, the device will return an "Acknowledge (ACK)" message.
Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
40H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the data to be sent does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the data should reside.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model – ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Request data : RQD (41H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.

On receiving an RQD message, the remote device checks its memory for the data address and size which satisfy the request. If it finds them and is ready for communication, the device will transmit a "Data set (DAT)" message, which contains the requested data. Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
41H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the requested data does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the requested data resides.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model - ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set : DAT (42H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, the message can convey the starting address of one or more data as well as a series of data formatted in an address - dependent order.

Although the MIDI standards inhibit non - real time messages from interrupting an exclusive one, some devices support a "soft - through" mechanism for such interrupts. To maintain compatibility with such devices, Roland has limited the DAT to 256 bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
42H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

*A DAT message is capable of providing only the valid data among those specified by an RQD or WSD message.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The number of bytes comprising address data varies from one model ID to another.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Acknowledge : ACK (43H)

This message is sent out when no error was detected on reception of a WSD, DAT, "End of data (EOD)", or some other message and a requested setup or action is complete. Unless it receives an ACK message, the device at the other end will not proceed to the next operation.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
43H	Command ID
F7H	End of exclusive

End of data : EOD (45H)

This message is sent out to inform a remote device of the end of a message. Communication, however, will not come to an end unless the remote device returns an ACK message even though an EOD message was transmitted.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
45H	Command ID
F7H	End of exclusive

Communications error : ERR (4EH)

This message warns the remote device of a communications fault encountered during message transmission due, for example, to a checksum error. An ERR message may be replaced with a "Rejection (RJC)" one, which terminates the current message transaction in midstream.

When it receives an ERR message, the sending device may either attempt to send out the last message a second time or terminate communication by sending out an RJC message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4EH	Command ID
F7H	End of exclusive

Rejection : RJC (4FH)

This message is sent out when there is a need to terminate communication by overriding the current message. An RJC message will be triggered when :

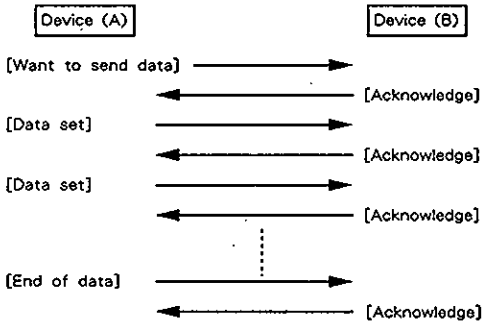
- a WSD or RQD message has specified an illegal data address or size.
- the device is not ready for communication.
- an illegal number of addresses or data has been detected.
- data transfer has been terminated by an operator.
- a communications error has occurred.

An ERR message may be sent out by a device on either side of the interface. Communication must be terminated immediately when either side triggers an ERR message.

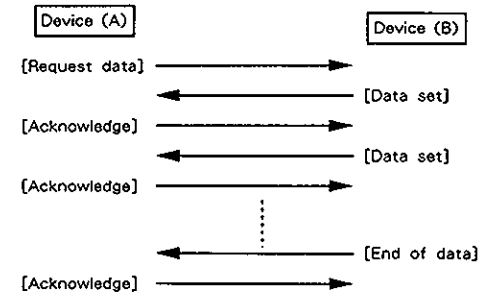
Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4FH	Command ID
F7H	End of exclusive

Example of Message Transactions

●Data transfer from device (A) to device (B).

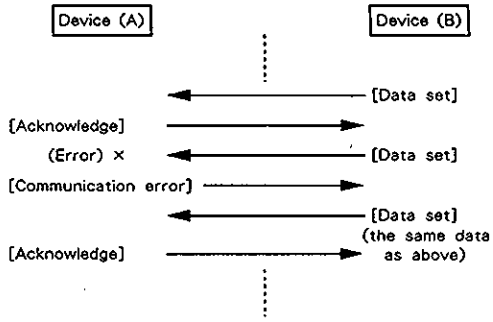


●Device (A) requests and receives data from device (B).

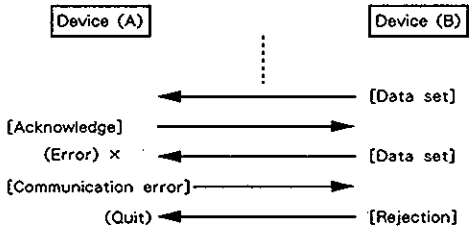


●Error occurs while device (A) is receiving data from device (B).

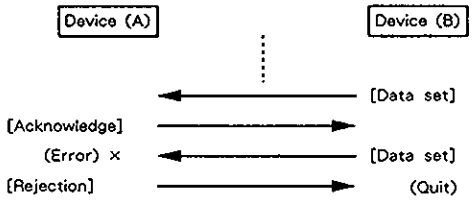
1) Data transfer from device (A) to device (B).



2) Device (B) rejects the data re – transmitied, and quits data transfer.



3) Device (A) immediately quits data transfer.



GS – 6 uses as the Basic channel the selected MIDI channel

1.TRANSMITTED DATA

■Program Change

Status	Second
CnH	kkH

n = MIDI channel : 0H – FH (1 – 16)
kk = Program number : 00H – 7FH (1 – 128)

Program numbers 40H – 7FH (65 – 128) can transmit, using Roland Foot Controller FC – 100.

■System Exclusive

Status
F0H : System Exclusive
F7H : EOX (End of Exclusive)

Transmitted when performing Bulk dump and receiving Data request (RQ1).
Refer to Section 3 for details.

■Active Sensing

Status
FEH

2.RECOGNIZED RECEIVE DATA

■Control Change

General Purpose Controller 1

Status	Second	Third
BnH	10H	vvH

n = MIDI channel number : 0H – FH (1 – 16)
vv = Expression : 00H – 7FH (0 – 127)

When vv is 7FH (127), it is the Master Volume value.
When vv is 0, Master Volume value is 0.

This function is selected as ON or OFF.

General Purpose Controller 5

Status	Second	Third
BnH	50H	vvH

n = MIDI channel number : 0H – FH (1 – 16)
vv = Mute OFF : 00H – 3FH (0 – 63)
vv = Mute ON : 40H – 7FH (64 – 127)

This function is selected as ON or OFF.

■Program Change

Status	Second
CnH	kkH

n = MIDI channel : 0H – FH (1 – 16)
kk = Program number : 00H – 7FH (1 – 128)

Program number : Receivng 40H – 7FH (65 – 128), is equivalent to receiving 00H – 3FH (1 – 64).

■Mode

Omni Off

Status	Second	Third
BnH	7CH	00H

n = MIDI channel : 0H – FH (1 – 16)

Omni On

Status	Second	Third
BnH	7DH	00H

n = MIDI channel : 0H – FH (1 – 16)

Mode messages, except those on the Basic channel, are not recognized.

■System Exclusive

Status
F0H : System Exclusive
F7H : EOX (End of Exclusive)

Used in the following three cases.
1) Receiving individual patch memory data
2) With MIDI messages, operating WRITE, CHORUS COPY, DELAY COPY and REVERB COPY
3) Operating Bulk load

Refer to Section 3 for details.

■Active Sensing

Status
FEH

Having received this message, GS – 6 expects to accept status or data in sequence, at least within 300 milliseconds intervals.
If the unit fails to receive a message 300 milliseconds after the previous one, it judges there is a problem somewhere in the MIDI patch, doing the maximum expression control (General purpose controller 1), and cancelling mute control (General purpose controller 5), and stopping 300 milliseconds – interval monitoring of the incomming signal.

3.EXCLUSIVE COMMUNICATION

Model – ID # in the exclusive message : 26H
Device – ID # : Basic channel # less 1

■One – Way Communication

Request data 1 RQ1 (11H)

When RQ1 received contains a start address listed in Parameter Base Address and the size is the same, GS – 6 sends the corresponding data using Data Set (DT1).

The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are 0 when values for an address, size, and that checksum are summed.

Byte	Description
F0H	Exclusive status
41H	Roland – ID
DEV	Device – ID
26H	Model – ID (GS – 6)
11H	Command – ID (RQ1)
aaH	Address MSB
aaH	Address LSB
ssH	Size MSB
ssH	Size LSB
sum	Checksum
F7H	EOX (End of Exclusive)

Data set 1 DT1 (12H)

When the WRITE button is being pressed for over one second in MIDI mode, GS – 6 sends Bulk data using this message.

The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are 0 when values for an address, datas, and that checksum are summed.

Byte	Description
F0H	Exclusive status
41H	Roland – ID
DEV	Device – ID
26H	Model – ID (GS – 6)
12H	Command – ID (DT1)
aaH	Address MSB
aaH	Address LSB
ddH	Data
:	
sum	Checksum
F7H	EOX (End of Exclusive)

4.Parameter Address Map

Addresses are shown in 7 – bit hexadecimal.

Address	MSB	LSB
Binary	0aaa aaaa	0bbb bbbb
7 – bit hex.	AA	BB

The actual address of a parameter in a block is the sum of the start address of each block and one or more offset addresses.

■Parameter Base Address

Start address	Size	Description	
00 00	00 20	Temporary Parameters	*4-1
04 00	06 00	Hum Cancel Frequency	*4-2
0A 00	06 00	Noise Suppressor Threshold Level	*4-3
10 00		Memory Parameters BANK1 NUMBER1	*4-1
10 20		Memory Parameters BANK1 NUMBER2	
:	00 20	:	
12 00		Memory Parameters BANK2 NUMBER1	
:		:	
1F 60		Memory Parameters BANK8 NUMBER8	
20 00		Bulk Data BANK1	*4-4
22 00	**	Bulk Data BANK2	
:		:	
2E 00		Bulk Data BANK8	
40 00	**	Write Request	*4-5
40 10		Chorus Copy Request	*4-6
40 20	**	Delay Copy Request	
40 30		Reverb Copy Request	

** Can not send on Data Request RQ1.

■Parameter Offset Address

*4 – 1 Temporary Parameters、Memory Parameters

Data is received and sent for each Patch Memory

Offset address	Description			
		PRE AMPLIFIER		
0	0aaa aaaa	PRE DRIVE	(0-99)	
1	0aaa aaaa	POST DRIVE	(0-99)	
2	0aaa aaaa	MASTER VOLUME	(0-99)	
3	0aaa aaaa	BASS	(0-99)	
4	0aaa aaaa	FREQUENCY (MID)	(0-99)	
5	0aaa aaaa	LEVEL (MID)	(0-99)	
6	0aaa aaaa	TREBLE	(0-99)	
7	0000 0aaa	DRIVE TYPE	(0- 7)	: 1 - 8
		CHORUS		
8	0aaa aaaa	PRE DELAY	(0-99)	
9	0aaa aaaa	FEEDBACK	(0-99)	
A	0aaa aaaa	RATE	(0-99)	
B	0aaa aaaa	DEPTH	(0-99)	
C	0000 0aaa	CHORUS TYPE	(0- 3)	: 1 - 4
		DELAY		
D	0aaa aaaa	PANNING	(0-99)	
E	0aaa aaaa	FEEDBACK	(0-99)	
F	0aaa aaaa	HF DAMP	(0-99)	
10	0aaa aaaa	LEVEL	(0-99)	
11	000a aaaa	DELAY TIME(UPPER)	(0-31)	
12	000b bbbb	DELAY TIME(LOWER)	(0-31)	
		DELAY TIME -> aaaaabbbbb		
			(0-998)	: 1 - 999 ms
		REVERB		
13	0aaa aaaa	PRE DELAY	(0-99)	
14	0aaa aaaa	TIME	(0-99)	
15	0aaa aaaa	EQ	(0-99)	
16	0aaa aaaa	LEVEL	(0-99)	
17	0000 0aaa	REVERB TYPE	(0- 7)	: 1 - 8
		SWITCHES		
18	000a aaaa		(0= OFF, 1= ON)	
		bit0	CHORUS	
		bit1	DELAY	
		bit2	REVERB	
		bit3	HUM CANCEL	
		bit4	NOISE SUPPRESSOR	

*4-2 Hum Cancel Frequency

Offset address	Description	
0	000a aaaa	HUM CANCEL FREQUENCY (UPPER)
1	0000 bbbb	HUM CANCEL FREQUENCY (LOWER)
		HUM CANCEL FREQUENCY -> aaaaabbbbb
		(0-449): 35.0 - 80.0 Hz

*4 – 3 Noise Suppressor Mode

Offset address	Description	
0	0000 0aaa	NOISE SUPPRESSOR THRESHOLD LEVEL (0- 4) : 1 - 5

*4 – 4 Bulk Data

Bulk data is received and sent 8 times from Bank 1 to 8.
The interval between each Bank data is over 20 milliseconds.
Bank data is in memory number order, and contains the Patch Memory Parameters shown in Fig.4 – 1 (offset addresses).

*4 – 5 Write Request

Setting data is memorized at Selected Patch Memory Number.

Offset address	Description		
0	00aa aaaa	MEMORY NUMBER	(0-63) : 1 - 64

*4 – 6 Chorus Copy Request、Delay Copy Request、Reverb Copy Request

Each effect of a selected Patch Memory Number is copied to the current Patch Memory Number.

Offset address	Description		
0	00aa aaaa	MEMORY NUMBER	(0-63) : 1 - 64

Address Map

Address	Block	Sub Block	Reference
00 00	Temporary Parameters		4-1
04 00	Num Cancel Frequency		4-2
0A 00	Noise Suppressor Threshold Level		4-3
10 00	Memory Parameters	Bank1, Number1 Bank1, Number2 : Bank8, Number7 Bank8, Number8	4-1
20 00	Bulk Data	Bank1 Bank2 : Bank7 Bank8	4-4
40 00	Write Request		4-5
40 10	Chorus Copy Request		4-6
40 20	Delay Copy Request		4-6
40 30	Reverb Copy Request		4-6

Digital Guitar Sound System
Model GS－6

MIDI Implementation Chart

Date : Dec. 27 1988
Version : 1.00

Function •••		Transmitted	Recognized	Remarks
Basic Channel	Default	1－16	1－16	Memorized
	Changed	1－16	1－16	
Mode	Default	×	OMNI ON／OFF	Memorized
	Messages	×	OMNI ON／OFF	
	Altered	＊＊＊＊＊＊＊＊＊		
Note Number	True Voice	×	×	
		＊＊＊＊＊＊＊＊＊	×	
Velocity	Note ON	×	×	
	Note OFF	×	×	
After Touch	Key's	×	×	
	Ch's	×	×	
Pitch Bender		×	×	
Control Change	16	×	○Expression (Master Volume)	ON or OFF
	80	×	○Mute	ON or OFF
Prog Change	True #	○ (0－127) ＊1	○ (0－127) ＊2	
		＊＊＊＊＊＊＊＊＊	0－63	
System Exclusive		○	○	Parameters
System Common	Song Pos	×	×	
	Song Sel	×	×	
	Tune	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Message	Local ON／OFF	×	×	
	All Notes OFF	×	×	
	Active Sense	○	○	
	Reset	×	×	

Notes

＊1 Program Change # (64－127) can transmit, using Roland Foot Controller FC－100.

＊2 n : Program Change #
$0 \leqq n \leqq 63$, corresponds to n＋1 of Memory Number.
$n \geqq 64$, corresponds to n－63 of Memory Number.

Mode 1 : OMNI ON, POLY　　Mode 2 : OMNI ON, MONO　　○ : Yes
Mode 3 : OMNI OFF, POLY　　Mode 4 : OMNI OFF, MONO　　× : No

SPECIFICATIONS

- **Patch Memories : 64**
- **A/D/A Converting System : 16 bit Linear**
- **Sampling Frequency : 32kHz**

[Parameter]

- **Preamplifier Section**

Drive Types × 8
Pre-drive
Post-drive
Master Volume
Bass
Middle Frequency
Middle Level
Treble

- **Effect Section**

Reverb
  Reveb Types × 8
  Pre-delay
  Time
  Equalizer
  Level
Delay
  Delay Time (1 – 999ms)
  Panning
  Feedback
  HF Damp
  Level
Chorus
  Chorus Types × 4
  Pre-delay
  Feedback
  Rate
  Depth

- **Noise Suppressor**

Threshold Level (5 steps)

- **Hum Cancel**

Frequency (35.0 – 80.0Hz)

[Front Panel]
Input Jack
Input Gain Knob
Output Level
Parameter Knobs × 7
Power Switch
Write Button
MIDI/Effect Copy Button
Value Button
Manual Button
Function Buttons (▲ ▼ ▶)
Reverb Button
Delay Button
Chorus Button
Noise Suppressor Button
Hum Cancel Button

[Rear Panel]
Select Switch (MIDI IN / RRC IN)
Output Jacks A (mono)/ B
Line Out Connectors A / B (XLR Type)
Memory Shift Jack
RRC IN Socket
MIDI Sockets (IN / OUT)

Dimensions : 482(W) × 340(D) × 44(H) mm/
19" × 13-3/8" × 1-3/4"
Power Consumption : 28W (117V / 220V / 240V)

Weight : 4.2kg / 9 lb. 4 oz.

Accessories
Owner's Manual
Guidebook for MIDI

Options
Foot Controller FC-100
Expression Pedal EV-5
Pedal Switch DP-2
Footswitch FS-5U (BOSS)

* The specifications for this product are subject to change without prior notice, in the interest of improvement.

For Nordic Countries

Apparatus containing Lithium batteries

ADVARSEL!

Lithiumbatteri. Eksplosionsfare.
Udskiftning må kun foretages af en sagkyndig, og som beskrevet i servicemanual.

VARNING!

Lithiumbatteri. Explosionsrisk.
Får endast bytas av behörig servicetekniker.
Se instruktioner i servicemanualen.

ADVARSEL!

Lithiumbatteri. Fare for eksplotion.
Må bare skiftes av kvalifisert tekniker som beskrevet i servicemanualen.

VAROITUS!

Lithiumparisto. Räjähdysvaara.
Pariston saa vaihtaa ainoastaan alan ammottimies.

For West Germany

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das
Roland Digital Guitar Sound System GS-6
(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der
Amtsbl. Vfg 1046/1984
(Amtsblattverfügung)

funk-entstört ist.
Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka/Japan
Name des Herstellers/Importeurs

For the USA

RADIO AND TELEVISION INTERFERENCE

WARNING — This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception. This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a rasidential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable.
  These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.
  If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures.
- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV. If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission:
  "How to Identify and Resolve Radio — TV Interference Problems"
  This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

For Canada

CLASS B **NOTICE**

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B **AVIS**

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Réglement des signaux parasites par le ministère canadien des Communications.

GS

26025682 '89-9-A3-6N

Roland

GS-6 FACTORY PRESET SETTINGS

OFF

PATCH NO.	NAME	PRE AMP.								REVERB						DELAY						CHORUS							NS	HUM
		D.TYP	1 PRE	2 POST	3 M.VOL	4 BASS	5 FREQ.	6 LEVEL	7 TREBE	ON/ OFF	R.TYP	4 P.DEL	5 TIME	6 EQ	7 LEVEL	ON/ OFF	TIME	4 PAN	5 FBACK	6 HF D	7 LEVEL	ON/ OFF	TYPE	4 P.DEL	5 FBACK	6 RATE	7 DEPTH	ON/ OFF	ON/ OFF
1-1	Clean	1	0	68	99	38	33	0	99		8	41	45	31	31		212	99	20	0	22		3	52	0	34	51		
1-2	Clean and Round	1	0	0	93	58	99	68	99	ON	3	51	47	71	58		80	99	26	0	68		3	78	0	28	44		
1-3	Boppin	1	35	99	62	85	44	16	99	ON	7	23	56	56	55		212	99	20	0	22		1	52	0	34	51		
1-4	Chorused Jazz/Rock	3	2	20	33	82	99	86	99	ON	3	51	43	40	46		200	48	20	99	48	ON	2	7	0	29	52		
1-5	Dark and Mellow	3	74	75	72	48	51	32	0	ON	8	51	48	0	23	ON	200	48	16	0	54		2	10	0	38	18		
1-6	Play Da Bluz	4	99	0	54	73	44	37	99	ON	7	51	42	25	40	ON	45	49	38	13	63		2	32	0	38	27		
1-7	Twin Leads	1	99	99	25	93	99	94	85		7	57	38	51	44	ON	225	49	19	0	50	ON	4	80	0	34	54		
1-8	Grit	7	78	78	35	52	99	25	78	ON	4	27	18	48	32		160	47	12	0	29		2	96	0	33	18		
2-1	Chorused JC-120	1	0	17	99	43	19	35	99	ON	6	57	41	72	19	ON	65	50	19	0	67	ON	4	99	19	18	41		
2-2	Fat JC-120	1	46	99	42	67	57	37	99	ON	6	57	44	68	43	ON	385	73	20	0	47	ON	2	99	58	44	26		
2-3	Heaven	1	48	58	64	63	0	10	99	ON	3	99	73	77	80	ON	355	99	81	51	73	ON	3	43	0	40	99		
2-4	Slightly Dirty	2	51	36	35	50	85	82	93	ON	4	53	33	46	34		298	99	3	63	34		1	26	0	46	42		
2-5	Bright Tube Lead	4	99	75	39	74	34	41	80	ON	6	15	40	60	49	ON	315	49	30	32	60		3	25	0	18	99		
2-6	American Tube Lead	6	99	82	32	30	36	31	48	ON	7	51	46	27	58	ON	500	99	16	11	50		3	57	0	64	15		
2-7	Dark Tube Lead	6	99	23	60	28	37	15	0	ON	8	27	45	10	42	ON	500	99	13	64	33	ON	4	3	0	21	8		
2-8	Chorused Tube Lead	6	51	68	27	68	48	40	38	ON	8	51	60	3	44		750	48	15	11	48	ON	3	23	0	36	42		
3-1	Rock Stack	6	99	0	16	99	99	74	94	ON	4	56	40	40	51		750	50	0	99	19	ON	2	90	0	36	17		
3-2	English Stack	6	0	27	17	99	61	68	99	ON	8	56	31	12	22	ON	112	48	0	0	56		2	90	0	36	17		
3-3	Tube Overdrive	3	12	18	41	74	99	86	99	ON	3	51	43	48	48		200	99	19	99	58		2	7	0	31	32		
3-4	Doubled Backing	4	99	0	45	75	99	48	79	ON	2	42	58	65	17	ON	80	52	2	0	93		2	7	0	32	40		
3-5	Fat Rock Lead	6	99	32	17	94	17	86	86	ON	3	15	44	66	74		750	99	19	19	55	ON	2	31	0	39	23		
3-6	Hacksaw Flange	6	57	72	16	52	99	57	72		4	15	44	54	29	ON	422	99	19	68	42	ON	1	18	0	29	24		
3-7	Big Gozilla	6	99	99	12	56	99	99	99		8	41	38	31	31	ON	109	60	28	99	99	ON	2	27	15	40	99		
3-8	Chonwa Chonwa	8	38	57	22	73	18	82	77	ON	5	77	5	99	23		730	72	41	72	14	ON	2	2	40	99	60		
4-1	Beefy Stack	5	94	79	24	99	9	99	88	ON	2	60	77	26	27		160	99	20	6	29	ON	2	0	0	26	0		
4-2	Big Metal	5	71	59	20	92	34	59	51		2	60	79	15	22	ON	60	97	32	0	99	ON	2	6	0	39	8		
4-3	Bright Metal	5	99	0	17	87	99	72	99	ON	4	56	45	30	24	ON	60	99	47	99	52	ON	2	90	0	36	17		
4-4	Full Metal	6	25	99	36	82	94	28	16	ON	3	60	53	47	19		208	99	13	99	52	ON	2	0	0	28	22		
4-5	Stereo Doubler	5	92	69	16	60	99	99	69		3	99	66	39	12	ON	91	97	33	0	96	ON	2	96	0	38	9		
4-6	Flanged Metal	5	91	41	20	88	32	80	80		1	22	42	73	23		175	99	16	0	58	ON	1	22	80	60	35		
4-7	Metal Chorus	5	92	49	23	87	33	56	61	ON	6	60	60	63	47		360	52	31	0	55	ON	3	62	74	30	64		
4-8	Machine Lead	5	84	78	28	99	47	93	99	ON	6	99	43	40	27	ON	999	51	8	44	42		4	15	0	43	10		

NS (Noise Suppressor): n-5, HUM (Hum Cancel): 60.0 Hz

26025921 '89-9-A3-5N

GS-6 SOUND CHART

Roland

Factory Preset

NUMBER / BANK	1 CUTTING A	2 CUTTING B	3 BACKING A	4 BACKING B	5 LEAD A	6 LEAD B	7 LEAD C	8 LEAD D
1 JAZZ/BLUES	Clean	Clean and Round	Boppin	Chorused Jazz/Rock	Dark and Mellow	Play Da Bluz	Twin Leads	Grit
2 FUSION	Chorused JC-120	Fat JC-120	Heaven	Slightly Dirty	Bright Tube Lead	American Tube Lead	Dark Tube Lead	Chorused Tube Lead
3 HARD ROCK	Rock Stack	English Stack	Tube Overdrive	Doubled Backing	Fat Rock Lead	Hacksaw Flange	Big Gozilla	Chonwa Chonwa
4 HEAVY METAL	Beefy Stack	Big Metal	Bright Metal	Full Metal	Stereo Doubler	Flanged Metal	Metal Chorus	Machine Lead

* Patch Memories 11 – 48 are preprogrammed exactly the same as 51 – 88 from the manufacturer.
To make your original sound, edit a Patch Memory of 51 – 88 and write it into 51 – 88.

＊工場出荷時には、パッチ・メモリー11～48と51～88は同じサウンドになっています。
オリジナルのサウンドを作る場合は、裏の表を参考に51～88の設定を変更すると便利です。